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Sandy City – Old City Hall Study Update

Date: December 6, 2017
To: Todd Asay
From: CRSA – Susie Petheram, Kelly Gillman
Re: Summary of site visit, code analysis, cost considerations

A. BUILDING CODE UPDATES

UPDATED EDITIONS OF BUILDING CODE(S) SINCE 2008

Since 2008 (date of the CRSA team’s building study report), all the codes and standards referenced in the study have been through one or more updates. Most codes referenced in this study were 2006. Codes are generally updated every three years. Thus, there have been updated editions in 2009, 2012, and 2015 for most codes.

Sandy City currently follows these editions of the codes referenced in the report:

- 2015 International Building Code (IBC)*
- 2015 International Existing Building Code (IEBC)**

**State Amendments are reflected in Title 15A of the Utah State Code.*

*** The 2015 edition of the International Existing Building Code marks the first time this has been published as its own standalone volume, rather than as a chapter of the IBC. Previously, the IEBC was contained as chapter 34 of the IBC. State Amendments are reflected in Title 15A of the Utah State Code.*

INTERNATIONAL EXISTING BUILDING CODE (2015) OVERVIEW

The IEBC is intended to provide alternative approaches to repair, alteration, and additions to existing buildings, which may not comply with the current building code requirements for new construction. The main objective in doing so is to provide parameters for meeting the life-safety goals of building code regulations, while avoiding cost-prohibitive rehabilitation to comply with new construction provisions that go well beyond the value of the building or the original scope of the alteration.

The IEBC works to ensure that new construction in existing buildings maintains or improves basic safety levels. The IEBC allows for options for controlled departure from full compliance with the family of International Codes that deal with new constructions, while maintaining basic levels for fire prevention, structural, and life safety features of the rehabilitated building. Provisions in other codes related to repairs, alterations, additions, relocation, and

changes in occupancy must also be addressed unless they conflict with the IEBC. In this case, the IEBC takes precedence.

As a standalone volume for 2015, the IEBC contains provisions for three main compliance methods. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of these method options, which are outlined in Sections 301.1.1 through 301.1.3. Historic Buildings are generally provided with the option to comply with alternate provisions when compliance with other chapters of the IEBC would damage contributing historic features. As a contributing building in the National Register Sandy Historic District, listed in 2007, this structure meets the IEBC definition of an historic building (see Chapter 2: Definitions).

An overview of the options and their relevant chapters of the IEBC are summarized as follows:

Option 1: Prescriptive Compliance Method (301.1.1)

This method originates from the former Chapter 34 of the IBC. Repairs, alterations, additions and changes of occupancy complying with Chapter 4 of the IEBC in buildings complying with the International Fire Code (IFC) are considered in compliance. Section 408 offers provisions for historic buildings. The provisions of the code that require improvements relative to a building's existing condition or, in the case of repairs, that require improvements relative to a building's pre-damage condition, SHALL NOT be mandatory for historic buildings **unless specifically required**, as in the case of **life safety hazards**. Section 408.2 states the provisions of the code SHALL apply to historic buildings judged by the building official to constitute a distinct life safety hazard.

Option 2: Work Area Compliance Method (301.1.2)

Repairs, alterations, additions, changes of occupancy, and relocated buildings complying with the applicable requirements of chapter 5 through 13 of the IEBC are considered in compliance.

Section 502 defines/classifies the level of work:

- Repairs
- Alterations – Level 1: The removal and replacement of the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.
- Alterations – Level 2 : Reconfiguration of space, addition or elimination of any door or window, reconfiguration or extension of any system, installation of any additional equipment
- Alterations – Level 3: Work area exceeds 50 percent of the building area

Historic buildings shall comply with Chapter 12's provisions for repair, alteration, and change of occupancy where compliance with other chapters of the 2015 IEBC would damage contributing historic features. Of note:

- A report must be filed which identifies the required safety feature in compliance with Chapter 12 where compliance with other chapters of the 2015 IEBC would damage contributing historic features.
- The building, as is, conforms to the construction requirements specified in the 2015 IEBC for occupancy and use.

- Existing handrails and guards are permitted to remain if not structurally dangerous.
- Change in occupancy: Historic buildings shall comply with Chapter 10 of the 2015 IEBC except as specifically permitted in Chapter 12, section 1205.

Option 3: Performance Compliance Method (301.1.3)

Repairs, alterations, additions, changes of occupancy, and relocated buildings complying with Chapter 14 of the IEBC are considered in compliance. This option was also provided in the former Chapter 34 of the IBC. Chapter 14 allows for existing buildings to be evaluated so an improvement on the current existing situation is reflected, based on various safety parameters and degree of code compliance for each issue. *No separate provisions for historic buildings are included for this compliance method.*

OVERVIEW OF UPDATES/NOTES FOR CHAPTER VII: HEALTH AND LIFE SAFETY

Based on these new codes, any updates to the analysis done for Chapter VII. Health and Life Safety in the 2008 study are summarized in this section.

A. USE AND OCCUPANCY CLASSIFICATION

The use and occupancy classifications, from Chapter 3 of the IBC, remain the same:

- Assembly Group A-3 (for the gymnasium and any other assembly areas with occupant loads great than 50 persons)
- Business Group B (for the office areas)

B. TYPE OF CONSTRUCTION

The construction type is classified in Chapter 6 of the IBC. The masonry bearing walls (brick exterior and hollow clay tile interior) would allow the building to be classified as a Type II-A. Type II-A allows for higher maximum building height and area than Type II-B for both Group A-3 and Group B.

C. BUILDING HEIGHT AND AREA

Mixed use/occupancies have minimum requirements for separation of occupancies (hours, fire rated):

- Between A-3 and B: 2 hours (non-sprinkled); 1 hour (sprinkled). If these requirements are not met, the most restrictive allowances for the occupancy groups shall be used. This would generally be Group A-3.

Maximum Allowable Heights/Area for Type II-A construction, non-sprinkled:

- Height: Assembly Group A-3 and Business Group B: 65 feet (85 feet if sprinkled)

- Stories Above Grade Plane: A-3 (non-sprinkled): 3 (4 if sprinkled); B (non-sprinkled): 5 (6 if sprinkled)
- Area: A-3 (non-sprinkled): 15,500 sq. ft. (if sprinkled and 1-story – 62,000 sq. ft.); B (non-sprinkled): 37,500 sq. ft. (if sprinkled and more than one story: 112,500 sq. ft.)

D. FIRE PROTECTION SYSTEMS

2015 IFC – Chapter 11: Requirements for Existing Buildings

Class A & B buildings are required to meet following sections:

- 1103.1.1 Historic Buildings shall develop a fire protection plan in accordance with NFPA 914. Fire protection plans shall comply with the maintenance and availability provisions in Sections 404.3 and 404.4.
- Existing buildings shall be equipped with standpipes installed in accordance with Section 905 where required in sections 1103.6.1. and 1103.6.2.

Utah State Code Amendments

The noted amendments to the IBC applicable to Sandy City in 2008 have been updated for the 2015 code. Utah State Code has adopted the following amendments to the IBC for Sandy City:

15A-4-107. Amendments to IBC applicable to Sandy City:

(1) A new IBC, Section (F) 903.2.13, is added as follows: "(F) 903.2.13 An automatic sprinkler system shall be installed in accordance with NFPA 13 throughout buildings containing all occupancies where fire flow exceeds 2,000 gallons per minute, based on Table B105.1 of the 2015 International Fire Code. Exempt locations as indicated in Section 903.3.1.1.1 are allowed.

Based on the Type II-A classification and the parameters in Table B105.1, the building size exceeds a fire flow of 2,000 gallons per minute.

E. MEANS OF EGRESS

The means of egress requirements remain the same if the occupancy class does not change. Specifically:

- The corridor and stair configuration meet the IBC criteria for emergency egress, Chapter 10.
- Open stairs are allowed to remain for A-3 and B occupancies.

F. ACCESSIBILITY

Accessibility analysis in the report was based on IBC and ICC/ANSI (standard A117.1). New ANSI standards were adopted in 2009 and new ADA Standards were adopted in 2010. Slight changes have been made and the 2010 ADA

requires compliance for any alteration that occurs on or after March 15, 2012. The 2015 IBC and IEBC match, by reference, the 2010 ADA standards.

Compliance/requirements are related to the compliance method for the work and to the level of work (as defined by the 2015 IEBC Section 502). As with other codes applicable to historic buildings, compliance with these alternative standards is deemed required unless *technically infeasible*.

IEBC Section 410 – Accessibility for Existing Building:

- Change in occupancy triggers compliance.
- Partial change indicates alterations comply with Sections 410.6/7/8.
- Historic buildings – section 410.9 of the IEBC contains provisions for designated historic structure that undergo alterations or a change of occupancy where compliance as outlined in section 410 for accessible routes, entrances, or toilet rooms would threaten or destroy the historic significance of the structure.

Remodeling and rehabilitation efforts may trigger a 20% of total cost investment in path of travel improvements. If the 20% does not make the path of travel fully accessible, priority should be given to elements that provide the greatest access, which begin with an accessible site and entrance.

CODE UPDATES/RECOMMENDATIONS SUMMARY

Based on the review of the code updates and new information, the overall recommendations in the 2008 report will remain essentially the same. The recommendations, by and large, exceeded minimum requirements for being in compliance with codes in regard to health-life safety in 2008 and continue to meet compliance based on the updated 2015 code provisions. Updates to the recommendations as noted in the following sections are based on new information, technology, changes in costs (technology/approach/materials have become more affordable), and assessment of the current conditions of the building.

B. CURRENT CONDITIONS

CRSA visited the building on two occasions. The first visit was a walk-through and documentation of the interior and exterior elements of the building. The second visit was to access and document the roof and mechanical systems of the building. The following summarizes conditions noted on these visits and input from city staff:

BUILDING INTERIOR

- The building is anticipated to remain as current used – for the city’s parks and recreation department as office and equipment storage. For cost estimate updates, we will thus focus on the office use scenario alone, rather than the adaptive re-use scenarios for residential or a community center.
- The parks and recreation department received a total of \$35,000 for upgrades during the last budget cycle. This funding has been used for updating the lower level after the Boys and Girls Club relocated to their new building [new carpet; new conference room with projector; new ceiling tiles], some updates to the stairs, and cosmetic changes such as detail painting on the wall trim tiles. *(see Image # 1)*

- Spaces are still used by various community groups and the conference room is also available for rental by the community. Much of the lower level space vacated by the Boys and Girls Club is being used for recreation equipment storage. *(see Image # 2)*
- The soft clay structural aspects of the building were noted as problematic by city staff. *(see Image # 3)*

EXTERIOR ENVELOPE/ELEMENTS

- In the southwest corner of the building, the exterior is showing more cracking, loose mortar, and bricks popping outward. This may be a result of the abatement and closure of the tunnel running westward from the building (described in the hazardous materials notes).
- The fiberglass window coverings, which offer insulation benefits but block the full height and beauty of the historic windows, are breaking down from exposure to sunlight. These are probably 30 to 40 years old and date to the city's occupation of the building as the city hall. On the inside, mildew is forming from leaks. *(see Image # 4 & 5)*
- City staff inquired whether the yellow color on the stucco details of the exterior was original. As is, the color is not very dynamic. There is interest in beautifying the exterior of the building, but they also do not want to compromise the historic character. The exposure to sunlight over time has probably lightened the original color. While the original drawings we have access to do not include color specifications, a reference point for the color scheme is the paint details on the gymnasium trusses. This color scheme is a mixture of deep yellows and reds. The stucco may originally been a comparable deep yellow color. *(see Image # 6 & 7)*
- City staff noted the gymnasium may be the last remaining barrel roof/masonry building in Salt Lake County, potentially the state. Midvale, which had an essentially identical building constructed by the same architectural plans, tore theirs down. Riverton may still have one. CRSA will check to see if the State Historic Preservation Office can verify the presence of any other extent barrel roof buildings. The drawback to the design of the barrel roof sitting directly on the masonry walls is the ability for the entire roof to fall flat if movement occurs during a seismic event. The report noted there is potential of steel girders connecting the roof to the walls, which can be confirmed by x-ray testing/analysis.
- When the new lower level conference room was remodeled, there was significant evidence of water damage/staining on the carpet underneath the south windows and cracking on the walls. The landscaping was removed directly outside these south windows and replaced with rocks. A concrete curb was added directly adjacent to the windows to divert water away from the foundation. However, this has now created the situation where small amounts of moisture lead and are trapped next to the window below the curb level (the windows on the lower level extend below the grade of the parking lot). The glazing material of the window is being impacted by this trapped moisture, leading to cracks and deterioration. *(see Image # 8)*
- The chain link fence on the north side has been removed and the landscaping updated to improve the appearance of the site. The ground on the north side of the building was noted to be very wet/moist with moss in the landscape. This may lead to moisture infiltration problems with proximity to the foundation if the ground is not sloped away from the foundation. *(see Image #9 & 10)*

- The roof condition remains about the same and the same materials are present as in the 2008 report. The membrane on the gymnasium roof remains in good condition. *(see Image # 11)* The vents are still used. The skylight was painted over on the interior for aesthetic purposes, to block the deteriorated condition of the skylight. *(see Image # 12)*

MECHANICAL SYSTEMS

- The steam boiler was de-commissioned in 2011/2012. The steam boiler itself was still functional, but leaks were occurring in the steam tunnel, which runs around the perimeter of the building. Repair was felt to be too tricky due to the tight space and presence of hazardous materials. The pipe and pipe fittings in the tunnel were identified as asbestos-containing materials during the 2008 report. *(see Image # 13)*
- A new furnace was put in to replace the steam boiler.
- The system is still a two pipe system with no variable flow. A variable system is considered a high priority for updating the function of the building.

HAZARDOUS MATERIALS

- Asbestos abatement was conducted during the remodel of the lower level after the Boys and Girls Club moved to their new space. The asbestos-containing tile was abated and removed before new carpet went in.
- The 1 x 1 ceiling tiles tested negative for asbestos.
- The mechanical tunnel running westward from the building was abated and closed during the parking lot construction process. The new parking lot went in to accommodate the loss of parking on the Boys and Girls Club building site. The parking lot and abatement costs were paid for by the Boys and Girls Club as part of the construction project for their new building. *(see Image # 14)*

C. COST CONSIDERATIONS/MODIFICATIONS

- The 2008 Study included cost estimates for a hydraulic elevator (4 stops) and shaft. This cost was included under the Core and Shell Upgrades – Mechanical Systems for both Option 1 and Option 2. An alternative recommendation is for a traction-based elevator system. The costs are more comparable now, but the traction system may provide a better user and service experience for this type of building. Traction elevators have higher speeds and move more efficiently. If a machine room is used, it is located above the elevator shaft. For hydraulic elevators, the machine room is located at the lowest level adjacent to the elevator shaft, which can take up potentially useable interior space.
- The cost of performing x-ray analysis for determining the presence of reinforcing steel in the existing concrete diaphragms and reinforcing stirrups was not specified in the previous cost estimate. These costs would be added to the lower cost approach only [Option 1], which assumed no retrofit of the diaphragms and no remedial work for gravity loads.

- Relocation costs for the Parks and Recreation staff and storage of recreation equipment during construction were not specified in the previous cost estimate. These costs will be determined by the number of people, amount of space (office and storage), and amount of time (project duration). Additionally, the city may want to factor in any loss of rental income from those community spaces available for rent in the building.
- Site work costs will likely decrease, based on some of the recommended work being done as part of the construction of the Boys and Girls Club on the site.
- Abatement costs will decrease based on the completion of some abatement work.

ROUGH UPDATED COSTS: CURRENT YEAR

Since the 2008 Study and cost estimates, the numbers are roughly estimated to have risen approximately 10 percent. The gross building area was estimated at 25,000 square feet for the 2008 Study cost estimates. For the cost estimate provided for the Office Use option, this translates into per square foot and total costs of:

- Option 1 [lower cost approach – methods/materials]: \$145.20/sq. ft.
 - **TOTAL COST: \$3,630,000**
- Option 2 [higher cost approach – methods/materials]: \$177.10/sq. ft.
 - **TOTAL COST: \$4,427,500**

FUTURE COSTS: 5-YEAR ESCALATION

The region is currently experiencing high growth, which means it is hard to get laborers for construction costs. As such, this impacts the escalation costs for projects. Escalation costs for the future are roughly estimated at 5 to 8 percent annual increase. This translates into the following ranges:

- Option 1: \$145.20 current year
 - 5-year cost estimate with **5%** annual increase: \$185.30/sq. ft.
 - **TOTAL COST: \$4,632,902**
 - 5-year cost estimate with **8%** annual increase: \$213.35/sq. ft.
 - **TOTAL COST: \$5,333,661**
- Option 2: \$177.10/sq. ft. current year
 - 5-year cost estimate with **5%** annual increase: \$226.00/sq. ft.
 - **TOTAL COST: \$5,650,737**
 - 5-year cost estimate with **8%** annual increase: \$260.20/sq. ft.
 - **TOTAL COST: \$6,505,450**

D. REPRESENTATIVE PHOTOS FROM 2017 SITE VISITS



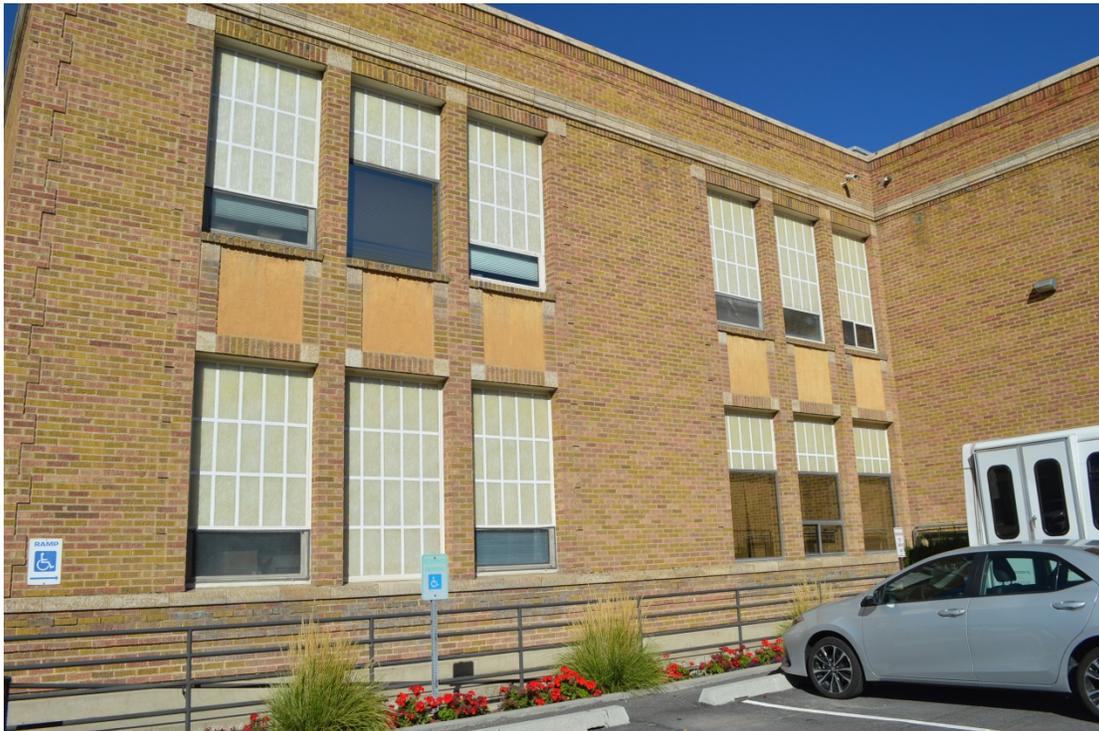
Image 1: Updates to the building include aesthetic improvements, such as detail painting of the decorative accent tiles in the hallways.



Image 2: The main level conference room is rented out for community use.



Image 3: The of the soft clay tiles of the interior wall structure is visible where holes have been made to run mechanical/electrical systems.



Images 4 & 5: The fiberglass covering on the windows is beginning to degrade, traps moisture leading to mildew, and also blocks the full beauty of the original windows.



Images 6 & 7: The exterior color scheme, including the yellow of the stucco accents is likely original, yet faded. The exterior color scheme was likely consistent with the original colors used on the interior, which are still visible in the beams of the gymnasium



Images 8: A new concrete curb was installed on the south side of the gymnasium wing to divert water; however, water is still being trapped against the window leading to degradation of the glazing.



Images 9 & 10: The front landscape has been updated. The planted area adjacent to the building was noted to be very moist, which may be of concern in relation to the foundation of the building.



Images 11: The roof membrane on the gymnasium wing is still in good condition.



Images 12: The interior glass of the skylight has been painted over, for aesthetic purposes (the skylight is in need of repair/replacement).



Images 13: The steam boiler was decommissioned and a new furnace installed.

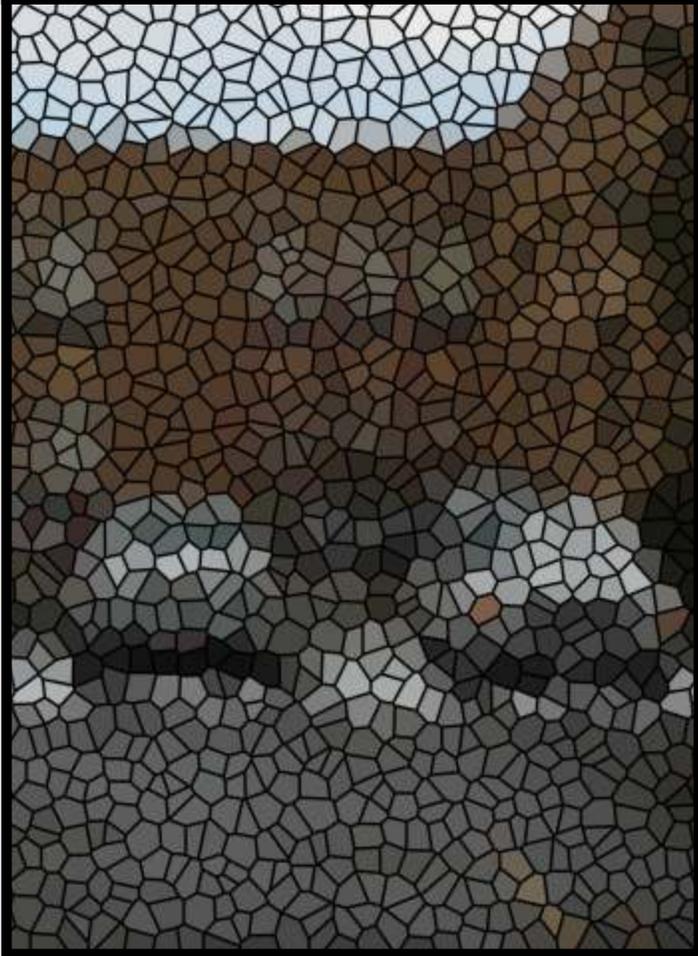
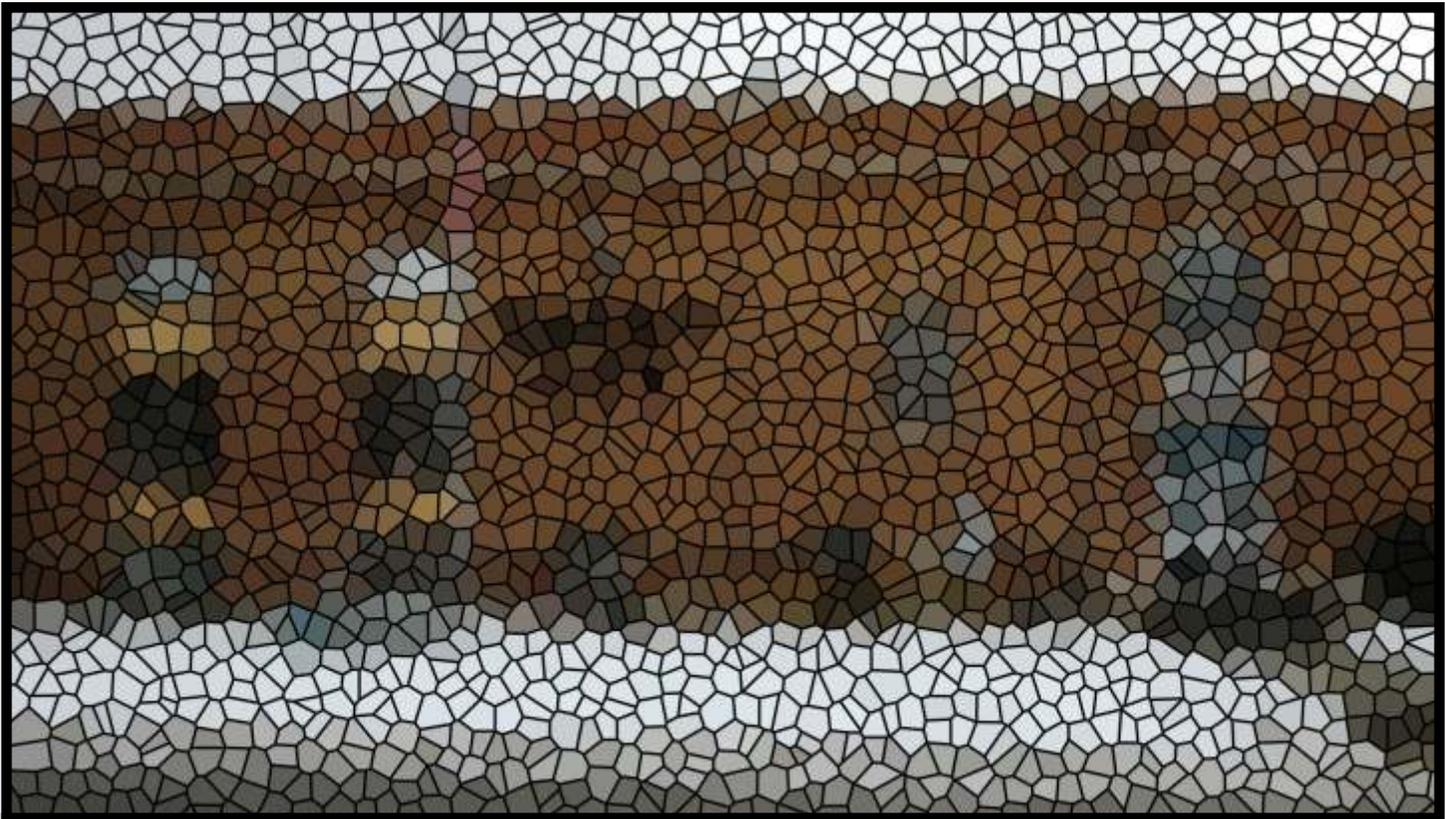


Images 14: A new parking lot to the west of the building was installed as part of the site improvements when the Boys and Girls Club building was constructed. A mechanical tunnel running westward from the building contained hazardous materials; this was abated and closed during the parking lot construction process.



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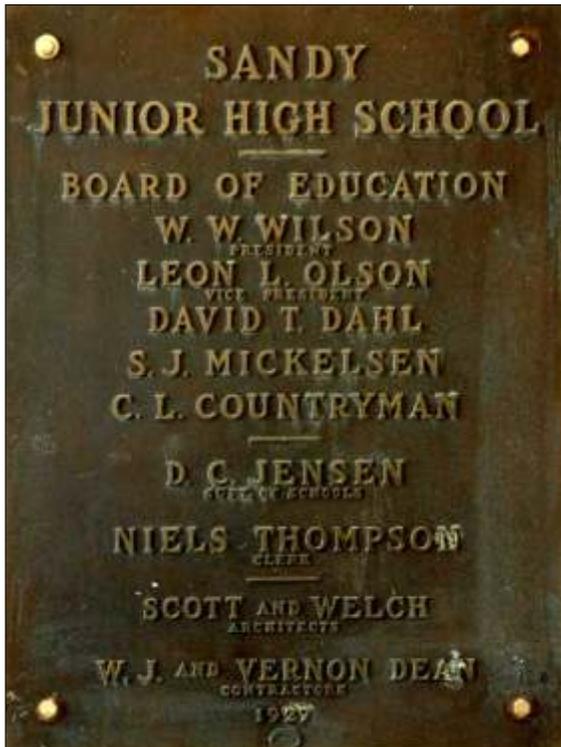
Sandy City Old City Hall Study

June 2008

CRSA | COOPER
ROBERTS
SIMONSEN
ASSOCIATES
ARCHITECTURE · PLANNING



DUNN ASSOCIATES, INC
Consulting Structural Engineers



Consultant Team

Architectural

Cooper Roberts Simonsen Associates
Salt Lake City, UT

Kim Hyatt
Mt. Pleasant, UT

Structural

Dunn Associates, Inc.
Salt Lake City, UT

Mechanical

Mechtech Engineering
Logan, UT

Electrical

Envision Engineering
Salt Lake City, UT

Table of Contents

I. Introduction and Purpose	1
II. Methodology	1
III. Executive Summary	3
IV. Exterior Envelope and Exterior Components	4
V. Building Interior and Interior Components	9
VI. Major Building Systems	14
VII. Health and Life Safety	17
VIII. Evaluation for Continued Use and/or Change of Occupancy	20
IX. Estimate of Costs and Conceptual Reuse Plans	21
Appendices	27

I. Introduction and Purpose

The Sandy Junior High School at 440 East 8680 South in Sandy, Salt Lake County, Utah was designed by prominent Utah architects Carl W. Scott and George W. Welch and completed in 1927. In 1976 the City of Sandy acquired the building from the Jordan School District and converted its use for the City's offices. In 1993, with the completion of Sandy's new City Hall near Interstate 15, the building was occupied by Sandy City Parks and Recreation and the Sandy Boys and Girls Club.

In the Fall of 2007, Sandy City issued a Request for Proposals (RFP) from interested firms to conduct a "comprehensive building study" of the old Sandy City Hall/Sandy Junior High School. The firm of Cooper Roberts Simonsen Associates (CRSA) and its team of consulting architects and engineers were subsequently engaged to perform the study, with the intent to "examine the condition of the building and required upgrades to restore the building to be fully functional and code compliant," as stated in the RFP. The RFP also indicated that the assessment should "[consider] the costs and value of restoring the Old City Hall Building compared to constructing a new building to meet the needs of the city." Three separate possibilities for continued use of the existing building were described in the RFP, as (1) a community center, (2) commercial office space, or (3) for residential use. The RFP further concluded that the completed study would be relied upon by city officials to determine "whether to put money into restoring the old building or constructing a new building."

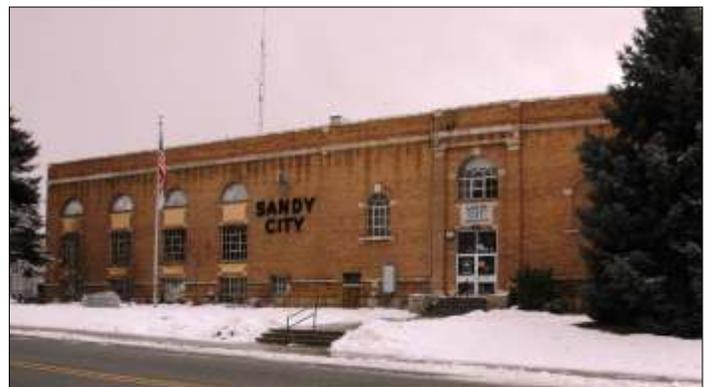
The purpose of the following building evaluation is to meet the goals as described in the Request for Proposals and as reiterated above. The analysis offered herein is intended to provide detailed information, including conceptual-level construction cost estimates, to allow the City to develop a rationale for weighing the value of updating the building for continued use or replacing the building. Finally, conceptual-level building programs for the three potential uses are included as a guide to City officials and others should it be determined that the preservation of this landmark structure is in the City's best interests.

II. Methodology

The CRSA evaluation team consisted of architects and consulting engineers experienced in the evaluation and renovation of existing structures, particularly historic buildings. Every major building component and key system was examined by the respective team member and carefully documented with photographs and field notes using non-destructive visual observations. Original construction

drawings were consulted to compare the configuration of existing spaces and building systems with the original design. The team also relied on the extensive knowledge of the building's history and condition from Mr. Ken Stauffer, Sandy City Facilities Manager. Found conditions were recorded in a systematic manner and are described in the written narrative that follows.

The narrative of this report is presented in a three-part format with a short description of Historic Data/Description relative to each building system or component presented first, followed by an explanation of the Existing Condition(s) and Recommendations for any proposed treatment (preservation, remediation, repairs, etc.). Annotated photographs are included for illustration. Reduced copies of original construction drawings as well as existing "as-is" plans are included in the Appendix.



The north facade of the 1927 building, facing 8680 South (historic ? Street)

III. Executive Summary

Building Description

A. General Description

The Sandy Junior High School/old Sandy City Hall is a two-story structure in an L-shaped plan and split-level configuration. In the original layout of the building as a school, the main classroom area was in the western portion of the building, perpendicular to 8680 South with the main entrance facing the street. Classrooms and office spaces were placed on either side of central corridors with entrances/exits at the ends of the corridor on the lower level. The gymnasium and locker/shower rooms were in the eastern portion of the building portion, with the gymnasium above the locker/shower rooms, domestic and mechanics arts rooms, and cafeteria area. An enclosed stair/egress system is located at the east end of the gymnasium wing.

B. Original Drawings

Copies of original Scott & Welch construction drawings dating from 1927 were obtained from Sandy City and consist of structural plans, floor plans, roof plan, exterior elevations, building sections, and miscellaneous interior elevations and details. The original drawings are not "as-built" plans as they do not appear to show actual built conditions, contractor's notes or other indications of possible changes that might have occurred during construction. Reduced copies of the original drawings are included in the Appendix.

C. Alterations

Only minimal documentation, in the form of the Parks and Recreation Department's evacuation plans, is available for the alterations that have occurred during the years since 1927. (These evacuation plans are also included in the Appendix.) It appears that all classrooms have been subdivided into smaller spaces, as have the "domestic arts," "mechanics arts," and cafeteria areas. The locker rooms have also been reduced in size. Lavatories, water closets, urinals and showers in the locker/shower rooms appear to be located where they were originally. These are the only toilet rooms in the building and are also accessible directly from the gymnasium by means of individual stairs, as they were designed.

The alterations and subdivisions of the larger spaces all appear to have been made by the City, presumably during its occupancy of the building from 1976 to 1993. Today, the Parks and Recreation department occupies the original classroom/office wing on the west, and the Boys and Girls

club occupies the lower level of the gymnasium wing. Another rather significant change that also appears to date from the City's occupancy is the conversion of the stage, originally accessed from the gymnasium and main stairs, to an area with access from the stairway landing only. In addition to rooms on the gymnasium level an elevated meeting room has been added above with access from the upper classroom floor.

As well as changes in spatial configuration, substantial alterations to ceiling heights and finishes such as floors, wall surfaces and trim have occurred. However, the original circulation plan (corridors, stairs and exits) has not been significantly altered, except for the addition of aluminum entrance/storefront system vestibules that have been added at the three main entrances/exits.



The building is a two-story structure in an L-shaped plan, with a gymnasium wing on the east portion.

IV. Exterior Envelope and Exterior Components

Note: Exterior components that relate to the structural system are further addressed in Section VI.

A. Footings and Foundations

1. Historical Data/Description

Footings and foundations are of continuous reinforced concrete, as designed by Scott & Welch. Foundations are exposed to about 30 inches above grade and are articulated with a chamfer of about ¾-inch by ¾-inch at the top of the wall. Exposed foundations are finished with a coat of cement plaster.

2. Existing Conditions

Due to their location below grade, footings could not be inspected. Original drawings show concrete footings of sufficient size to support gravity loads. Concrete foundations appear to be in good physical condition, except for the presence of fungal and/or microbial growth (mold, mildew, lichens, etc.). No substantial deterioration or failure of the plaster finish was observed.

3. Recommendations

Additional footings and appropriate connections between existing and new footings may be necessary for a complete seismic upgrade. (See structural evaluation below.) Foundation cleaning should be completed concurrent with the masonry cleaning and restoration described below. At that time, deteriorated plaster may also be repaired, if it occurs.

Although site landscaping and irrigation are beyond the scope



The concrete foundation is in good condition, with no substantial deterioration of the plaster finish.

of this report, it is recommended that future foundation planting and irrigation be limited. This will keep irrigation water away from the foundation and exterior walls and will help prevent excessive moisture infiltration. A no-irrigation zone of at least three feet from the foundation is recommended.

B. Exterior Walls

1. Historical Data/Description

Exterior walls consist of load-bearing unreinforced multi-wythe masonry. The walls terminate in roof parapets that vary in height, finished with terra cotta coping. The entrances are flanked by brick pilasters that extend vertically to the terra cotta cornice.

2. Existing Conditions

Exterior walls are in excellent condition, with few signs of stair-stepped cracking that commonly occurs in settled or structurally deficient brick masonry. Some minor cracking was observed at the mortar joints between bricks and terra cotta. The masonry, however, is in need of some restoration and cleaning.

3. Recommendations

Masonry restoration and cleaning are addressed in the following section. Parapets are fairly short relative to the roof line; however, structural bracing or vertical wall coring to stabilize parapets for lateral (seismic) loads may be required as part of a general seismic building upgrade. (See structural evaluation.)

C. Brick and Terra Cotta Masonry, Openings and Trim

1. Historical Data/Description

The exterior face bricks range in color from brown to dark yellow with a vertical scratch finish. The brickwork is set off by a lightly-colored contrasting terra cotta trim. The masonry is articulated with recessed bricks and a terra cotta belt course above the foundation, terra cotta pilaster bases and capitals, terra cotta cornices and parapet copings, terra cotta trim at masonry openings, and brick quoins. Additional features include articulated roman-arched openings, brick window sills, and miscellaneous details such as a brick soldier course immediately below the terra cotta coping.

2. Existing Conditions

The same fungal and microbial growth observed at the exposed concrete foundation is apparent on the bricks and mortar, with very little occurring at the terra cotta itself. However, the mortar at the terra cotta is also susceptible to these conditions. There is considerable staining below the entire upper terra cotta cornice or belt course, that appears to be due to the failure of the mortar at the vertical joints between units. Otherwise, the masonry is in very good condition. Minor cracks are visible as noted above.

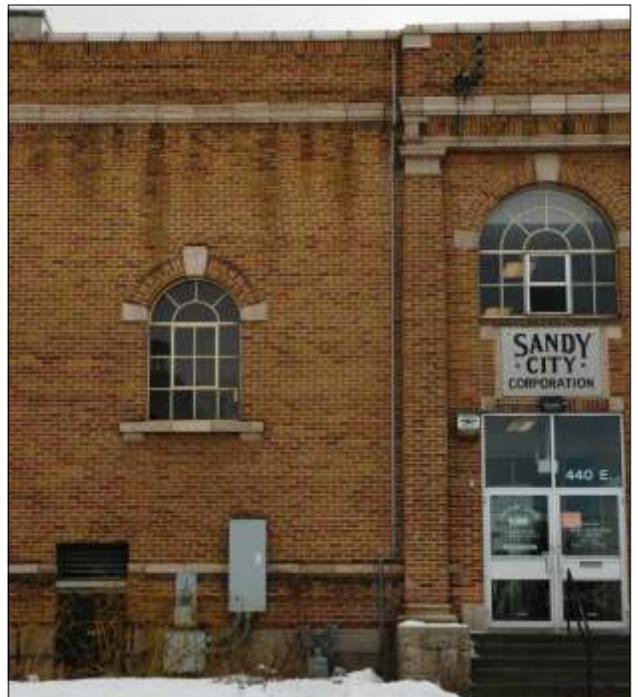
3. Recommendations

Thorough masonry restoration and cleaning are recommended. Only a qualified contractor sufficiently experienced in the restoration and cleaning of historic masonry should be engaged to do the work. The restoration would consist of removing any substantially deteriorated masonry units and replacing them with like units, if any such deteriorated masonry is encountered in the restoration and cleaning process. Minimally damaged terra cotta can be repaired with an epoxy patching compound that matches the color and finish. Restoration would also include re-pointing the existing mortar by removing any loose, cracked or deteriorated mortar to a depth one and one-half times the joint thickness and replacing the mortar with mortar that matches the existing in materials, consistency, color and strength. Fully re-laying loose parapet coping units using the same mortar mix as that used for re-pointing may be necessary. (This process would be necessary if a seismic retrofit including vertical wall coring is chosen. Parapet coping would be removed where necessary and replaced upon completion of the coring and grouting.) Cleaning should follow the restoration. A mild acid wash may be used, followed by

thorough rinsing using a low-pressure water spray unit. The masonry restoration and cleaning contractor may have other recommendations for further removing and cleaning fungi and/or microbial growth. Finally, a breathable sealer should be applied to protect the masonry from moisture and from the accumulation of soil, fungi and microbes.



There is some evidence of fungal and microbial growth on the bricks and mortar that should be cleaned by a contractor that specializes in historic masonry buildings.



Top, Above: Visible staining below the upper terra cotta belt course appears to be due to failure of the mortar between the vertical joints.

D. Exterior Doors and Windows

1. Historical Data/Description

Original exterior doors appear to have been paneled wood doors, possibly in wood frames. Windows were subdivided steel casement units, some with operable steel sashes. Obscure glass was used in the locker/shower/restroom areas.

2. Existing Conditions

Main entrance doors have all been replaced with aluminum storefront/entrance systems in various configurations. Original exterior windows are largely intact, with the exception of those on the west elevation, about two-thirds of which have been replaced with modern bronze anodized aluminum units subdivided in configurations that do not match the original steel windows. In those original steel windows that remain, various types of glass have been used through the years as replacement glazing, new operable areas have been added, and in the case of the upper half-round windows in the gymnasium, the glass has been obscured with paint.

3. Recommendations

Various options exist for both windows and doors, depending on how historically accurate any rehabilitation scenario would be:

Option 1: Refurbish existing doors and windows as necessary; replace broken glass and missing or deteriorated glazing putty and repair or fix in place any operable sashes.

Option 2: Replace all windows and doors with modern units. Configurations may or may not match historic



Aluminum storefront doors have replaced the historic wood panel doors at all three of the main entrances.

appearance. Modern steel windows are available with thermally-glazed inserts that would perform to modern energy conservation standards. Exterior muntins can be applied to the windows to match the configuration of the historic divided-light windows. Aluminum storefront entrance systems could be configured such that the doors themselves mimic the appearance of the original doors, as seen in the original construction drawings.

Option 3: Replace entrance doors with wood doors in steel frames that resemble original doors as closely as possible. Restore existing steel windows and replace later aluminum windows with steel windows to match the original. (Steel windows are still available that are nearly identical to the existing windows.) Existing glass can all be removed and replaced with double-glazed inserts for better thermal performance. Once the glass is removed, the steel can be cleaned or sandblasted and repainted with high-performance exterior grade paint preparatory to re-glazing with the new glass inserts.

Of the possibilities described above, Option 1 is, of course, the least expensive, but it is also the least desirable, for both aesthetic and energy conservation purposes. Option 2 is the



Original steel sash windows remain in much of the building (top), with the exception of the west elevation that has some modern replacement windows that only partially fill the original window opening (above).

most invasive from an historic preservation perspective. Complete window replacement is also likely to be more expensive than restoring the existing windows as described in Option 3. Option 3, then, is the preferred approach to window and door treatment.

In either Option 2 or 3, low-emissivity ("low-e") glass or neutrally tinted glass is recommended. Additional evaluation of the respective energy performance of each system should also be performed. While restoring existing windows as described in Option 3 may not be as energy efficient as complete replacement with new windows, it may still be possible to achieve satisfactory results and conform to modern energy conservation and energy code criteria while retaining the important historic character of the windows. Additionally, although restoring the existing windows may not provide units that are as energy efficient as replacement windows, the cost of the new replacement windows may be greater than the associated energy savings.

E. Roofing, Parapets, Flashing and Trim, Miscellaneous Roof Components

1. Historical Data/Description

The west wing has a flat roof with internal roof drains. The roofing is reported to be a three-ply built-up roof, installed about 12 years ago. The bow-trussed gymnasium roof is covered with a single-ply PVC membrane that appears to be just a few years old.

Parapet walls are an extension of the exterior walls and vary in height, according to the roof slope, from about 12 to 24 inches. Parapets are topped with terra cotta coping blocks



Areas of pooled water indicating insufficient slope toward the roof drains on the west classroom wing. Original gravity globe vents are no longer necessary and can be removed.

(as opposed to thin terra cotta tiles). The one exception is the north exterior wall/parapet of the gymnasium wing, which is capped with terra cotta tiles.

Additional elements on the roof include flashings at various penetrations and three large metal gravity roof vents ("globe vents" per Scott & Welch) that appear to be no longer functional. Originally there were two hipped roof-mounted skylights, one each over the two main interior stairs. Currently only the one at the center stair still exists. A concrete ventilation chase with metal louvers extends above the roof approximately above the existing mechanical room.

2. Existing Conditions

The roof of the west wing shows significant ponding from insufficient grade or slope toward the drains, and at 12 years of age, the built-up roof is at the end of its expected service life. The single-ply membrane at the gymnasium roof can be expected to provide between 10 and 20 years of adequate service.

Flashings at penetrations such as plumbing vents consist of some old sheet metal, with roofing membranes extending up the parapets and terminating just below the coping at the perimeter parapets. Terra cotta tiles are in fair condition, but mortar has significantly deteriorated. The perimeter terra cotta coping is addressed above.)

The remaining skylight is in poor condition, with loose flashings, deteriorated glazing putty and broken glass. The metal gravity vents are no longer necessary, even with the existing mechanical system, and would also be unnecessary for any replacement mechanical system.



Roofing membranes currently extend up the parapets to terminate just below the coping.

3. Recommendations

Roofing replacement is somewhat dependent upon the level of sophistication of the proposed seismic retrofit. If roof diaphragm strengthening is performed by applying a fiber-wrap system to the concrete roof decks (see structural evaluation) then complete re-roofing, including the gymnasium roof, will be necessary. In any case, re-roofing should not be performed without completely removing all old roofing, adhesives and substrates from the concrete deck.

Even without seismic upgrades that may impact roofing, roof replacement at the west wing is warranted. Single-ply systems generally last longer than built-up systems and warranties vary according to manufacturer. A single-ply PVC membrane similar to that on the gymnasium roof is recommended. Other single-ply systems such as EPDM membranes may be considered. A new rigid insulation system should be installed to increase the roof slope and ensure positive roof drainage. New secondary drains or secondary scuppers at the parapets should also be installed.

Parapet conditions and recommendations as they pertain to the masonry have been addressed above. Flashings at the parapets would be replaced at the time of re-roofing, with the roof membrane system extending up the face of the parapets as high as practicable. Flashings at all roof penetrations should also be replaced with flashing systems compatible with the new roofing.

The original gravity vents and any other unused rooftop equipment should be removed. Skylights provide good natural

daylight and a pleasant environment at the stairs. It is not recommended that the existing skylight be restored, but instead it should be replaced with a modern aluminum skylight such as those manufactured by Aladdin Industries of Salt Lake City, in a configuration that mimics the historic hipped skylight. Installation of a similar new skylight at the east stair where the original has been removed is also recommended. At the time of re-roofing and skylight replacement, the existing curb should be inspected and repaired or replaced, if needed.

Other elements that impact roofing conditions include rooftop mechanical equipment, gas lines, condensate lines, etc. All should be installed according to the roofing manufacturer's instructions and warranty criteria.



Although the mortar is deteriorating, terra cotta parapet tiles on the north wall of the gymnasium wing are themselves in fair condition.



One original hipped-roof skylight remains over the north stairwell but is in poor condition. Replacement skylights over both stairwells are recommended for natural daylight.

V. Building Interior and Interior Components

A. Original Floor Plans and Existing Configuration

1. Historical Data/Description

The original Scott & Welch drawings describe only two floors, the ground floor and first floor, although the building is configured in a split-level plan and has four separate levels. For the purposes of this evaluation and for ease in referencing specific locations within the building, we have designated the gymnasium portion of the building as the gymnasium wing and the main classroom portion as the classroom wing. We have also designated the floors/levels as follows:

Level 1 Lowest level, partially below grade, in the gymnasium wing. This level includes original locker/shower rooms, domestic arts, domestic science and mechanics arts classrooms, cafeteria and mechanical space under the original stage area.

Level 2 Second level, approximately 30 inches above grade, is the lower level in the classroom wing. This level includes original classrooms, offices and storage area.

Level 3 Gymnasium level. This level includes gymnasium and a small projection room accessed from the east exit stair enclosure.

Level 4 Uppermost level, in the classroom wing. This level includes original classrooms and a new room with an elevated floor over the original stage area.

The original stage area was elevated 42 inches above the gymnasium floor and was within the volume of the classroom wing. As noted above, the stage has been converted to storage space and a small office area accessed directly from the stair landing at the level of the gymnasium with an additional meeting space above, accessed from Level 4.

2. Existing Conditions

Virtually all areas of the building have been appreciably changed from their original configurations, as briefly described above. In historic preservation terms, much of the building's interior has lost its historic character. The more significant alterations include the addition of partition walls to subdivide original classroom areas into smaller office and storage spaces and lowered or dropped ceilings in the original classroom areas and corridors. Changes also include the following (refer to original floor plans and the Parks and Recreation evacuation plans):

Level 1 Used largely by Sandy Club, Inc. (boys' and girls' club). Locker areas in the original locker and shower rooms have been reconfigured for other uses such as a small break room and storage. The restrooms still serve the entire building and include showers. The mechanics arts space is used for a large game room and now includes the original cafeteria space, as well. A portion of the domestic science room has been reconfigured for an electrical and communications room. The space under the original stage is the main mechanical room.

Level 2 Serves as the main office area for the Parks and Recreation Department. The original teachers lounge area appears largely unaltered but all other classroom areas have been subdivided for use as offices. The original stage area has been converted to small offices and storage area, accessible from the stair landings.

Level 3 The gymnasium proper and the projection room appear to be unaltered. The stage no longer exists and what would have been the proscenium wall now contains storage closets. Stairs leading down to the shower/restrooms on Level 1 are intact.

Level 4 On the west side the two northernmost of the four classrooms are mostly unchanged, except for lowered ceilings. The south end has been subdivided into smaller offices. The space over the original stage has been converted to a conference room (was the City Council chambers when occupied by the City) with an elevated floor.



The gymnasium wing contains the first (currently occupied by the Sandy Boys & Girls Club) and third (gymnasium) levels of the building. The classroom wing, at left, contains the second and fourth levels (occupied by the Sandy Parks and Recreation Department offices).

3. Recommendations

While some original partition walls remain, their construction (unreinforced hollow clay tiles) performs poorly in an earthquake and their demolition is recommended for life safety. The demolition of the original clay tile walls will also necessitate the demolition of the coved plaster ceilings, inasmuch as they are connected to the walls. Consequently, only the walls separating the classroom wing from the gymnasium wing would remain. The extensive demolition contemplated allows a virtual clean slate for reconfiguring the interior for any use. However, it is recommended that the gymnasium remain in its existing and original configuration and that the historic corridor and circulation plan be essentially reconstructed.



The gymnasium remains, although the stage area (far end of photo) has been filled in with storage and meeting rooms. The maple floor is thought to be the original.



The central corridor on Level 2 retains its original high coved ceiling. With the exception of the gymnasium the remainder of the corridors and rooms have dropped ceilings in place.

B. Horizontal and Vertical Circulation

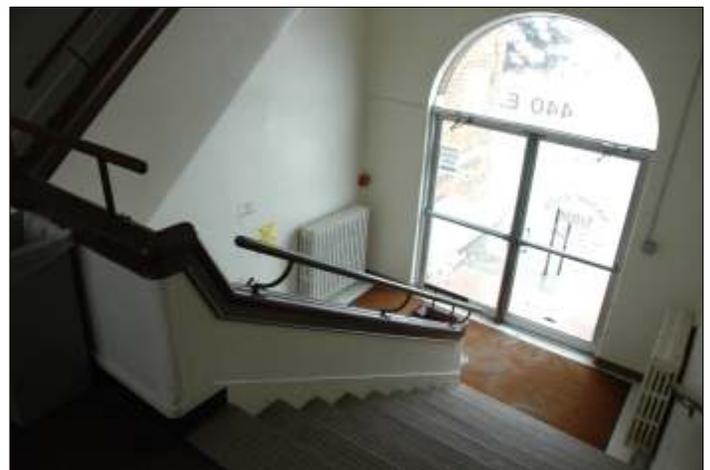
1. Historical Data/Description

Horizontal circulation within the building consisted of 10-foot-wide central corridors on both levels of the classroom wing (Level 2 and Level 4). At the classroom lower level (Level 2), the corridor terminates at the main entrance on the north and a second entrance on the south. The upper level (Level 4) corridor terminates in large arched windows directly above the entrances. Student lockers originally lined approximately one-half of each side of both corridors in shallow recesses.

Vertical circulation consisted of two main stairs, one located near the center and on the east side of the classroom wing, the other at the northeast corner of the classroom wing. Intermediate landings allow for access directly to the gymnasium from the stairs. A third main stair was located at the east end of the gymnasium wing for access to the lower level of the gymnasium wing (Level 1), the gymnasium (Level 3) and the projection room above the stairs. Smaller secondary stairs on either side at the west end of the gymnasium allow for direct access between the locker rooms, showers and restrooms on Level 1 and the gymnasium.

2. Existing Conditions

Corridors are largely intact from their original design, even including the recesses that were constructed to allow locker installation. (The lockers, themselves have been removed.) The coved ceiling in the corridor on Level 2 is still exposed, but the corridor ceiling on Level 4 has been concealed by a



Two main stairs located on the east side of the classroom wing provided circulation between all four levels. This staircase at the east end of the gymnasium wing provided circulation between the lowest level and the gymnasium.

lower lay-in acoustic panel ceiling. The stairs remain in their original configuration.

3. Recommendations

As noted above, demolition necessary to improve the overall building's performance for seismic safety will leave the interior of the building in a gutted state. New corridors could be configured differently than as designed, but the locations of entrances and windows suggest that new corridors should be rebuilt in the original locations and widths. New covered ceilings could also be constructed to give a sense of historicity to the interior.

C. Floor Finishes

1. Historical Data/Description

According to the Scott & Welch drawings, Level 1 was to have cement floors only, while the classrooms and offices are all shown to be maple (wood strip) flooring. Drawings do not indicate the architects' intentions for the corridors, gymnasium and stage, although it is likely that they, too were originally finished in maple strip flooring. Neither is it clear how the main stairs were to be finished, but a cement finish (finished concrete) or some resilient material such as linoleum would have been an appropriate and logical choice. The stairs from the locker rooms to the gymnasium are now painted concrete, consistent with the architects' selection of finished concrete for Level 1 areas.

2. Existing Conditions

All of the original classroom areas and corridors have been covered with carpet. It is unknown if any of the original maple



Narrow stairs lead from the west end of the gymnasium directly down to the restrooms located on the level below.

flooring in these areas is intact. The maple flooring in the gymnasium may be the original flooring as numerous repairs are visible. However, it also appears that the flooring may not sustain another refinishing, which usually involves completely re-sanding the surface.

The restrooms floors are finished with porcelain mosaic tile in green tones, and much of this may be original. Numerous repairs and patches are visible, some in unmatched shades of green.

3. Recommendations

With the level of future remodeling anticipated there is no compelling reason to preserve existing floor finishes, except perhaps in the gymnasium. New floor finishes might include some maple strip flooring to mimic the original floors, particularly in the corridors. Other finishes such as linoleum that are consistent with the period and type of original construction may also be considered.



Carpet has been laid over the original floor finish in most classrooms and the corridors (top, above). A suspended acoustical tile system obscures the original tall ceilings.

D. Interior Partitions and Wall Finishes

1. Historical Data/Description

The original drawings dimension some interior partitions to be four inches thick and the construction material is not indicated precisely. These partitions appear to be unreinforced masonry, likely of hollow clay tile, a common material for that purpose in the 1920's.

It appears that almost all wall finishes were simply painted plaster, except perhaps for some ceramic tile in the locker rooms, showers and restrooms, and Celotex (a proprietary fiber board, sound-absorptive material) at the stage wall of the gymnasium. There is a horizontal decorative tile strip in the corridors, stairs and classrooms, about four feet above the floor. There is also a large horizontal wood molding about nine feet above the floor in the gymnasium.

2. Existing Conditions

As already described, existing partitions are a mix of some original hollow clay tile walls and later framed construction. The type of framing (wood or light gauge steel studs) is unknown. At exterior walls the original plaster appears to be largely undamaged. The presence of some mold has been noted by the city in a corner near the southeast entrance door at the bottom of the ramp. The original tile and wood moldings appear to be intact where they occurred. Tile moldings, however, have been painted, such as those in the corridors.

3. Recommendations

As already noted, it is expected that both new and original partitions will all be removed, largely to improve life safety through a structural seismic upgrade. As a result, only plaster finishes at the exterior walls may remain. Where appropriate, the plaster can be repaired and repainted or replaced if necessary after seismic upgrades are completed. Furring out the exterior walls (adding a stud wall layer) to allow installation of some kind of insulation can also be considered, although the thermal mass properties of the multi-wythe brick walls do not make this necessary. Features such as wood and tile moldings could be installed that resemble or match the originals.

E. Ceiling Finishes

1. Historical Data/Description

Most original ceilings appear to have been painted plaster, with coved ceilings in the corridors. The ceiling height in the corridors and classrooms was about 12 feet, with what appears in the drawings to be a decorative molding or picture rail at about ten feet above the floor. In the gymnasium the ceiling is over 21 feet above the floor, also originally finished with Celotex, with decoratively painted plaster soffits that occur below each bow truss.

2. Existing Conditions

Most original plaster ceilings are now hidden by modern acoustic lay-in panel ceiling systems. Later mechanical ducts have also been installed in the interstitial space between the original and newer ceilings. The gymnasium ceiling has not been lowered, but the ceiling has been re-covered with acoustic tiles in various styles and sizes.



Decoratively painted soffits are below each bow truss of the gymnasium ceiling.

3. Recommendations

Recommendations for ceiling materials will likely be determined by use. In a residential occupancy, drywall ceilings are generally preferred, while lay-in acoustic panel ceilings are more likely for an office use. In either scenario, coved ceilings to match the original corridor ceilings are possible and recommended.

F. Doors and Windows

1. Historical Data/Description

Classroom doors were originally paneled wood doors, with subdivided glazed upper vision panels. The original finish (paint or a clear finish) is not specified. Additional interior doors such as those to utility or mechanical areas were paneled wood without vision lights.

There were some interior windows between the mechanics arts classroom and the cafeteria, designated in the original drawings to be wood sashes with "syenite glass." (Syenite, or nepheline syenite, is a mineral used in the fabrication of glass that increases the resistance to scratches, chemicals and breakage.)



Modern wood slab doors have replaced the original wood panel doors throughout the building. Additional aluminum frame storefront doors have been added to cordon off the south end of the Level 4 corridor.

2. Existing Conditions

With the exception of doors leading to the restrooms from the gymnasium, all original doors are missing, and all original interior windows have been removed.

3. Recommendations

Glazed paneled wood doors may be found similar to the original doors for an office use, but would be inappropriate for residential use due to the required fire resistance rating. For any reuse scenario, paneled doors are preferred. Slab doors of any kind are discouraged. Similarly, if any interior windows are installed, wood-stopped systems are preferred to either steel or aluminum to imitate the original wood interior windows.



The original wood panel doors with a divided glass upper panel still remain at the entrances to the stairwells that lead from the gymnasium to the restrooms below.

VI. Major Building Systems

A. *Structural System* (The full report from Dunn Associates is included in the Appendix.)

1. Historical Data/Description

The structural system is fairly well documented in the Scott & Welch drawings and includes reinforced concrete footings and foundations and unreinforced multi-wythe load-bearing walls (both exterior and interior). The floors and roof deck consist of reinforced concrete supported by a combination of structural steel "I" beams, joists, steel trusses and concrete beams. The gymnasium roof is also a concrete deck supported by structural steel joists that bear on large steel bow trusses. Vertical load paths appear to be carefully designed for gravity loads, but there appears to be no consideration for lateral (seismic) forces. (Seismic design was not required by building codes in Utah until the 1970's.)

2. Existing Conditions

The only deficiency noted for the existing gravity system appears to be the lack of reinforcing stirrups in concrete girders. The original drawings do not show stirrups that would be required by modern codes for gravity loads.

As expected, significant seismic deficiencies exist, due to the era of construction when design for seismic criteria was not required. These deficiencies include:

- A. Floor and roof diaphragms, which consist of unreinforced concrete decks, are inadequate for seismic loads.
- B. The exterior unreinforced masonry walls lack the strength or deformability to resist lateral forces.
- C. The floor plan irregularity (L-shaped) tends to draw increased shear forces to the inside corner, where no additional reinforcing or shear walls are occur.
- D. There are no substantial connections between walls and diaphragms.
- E. Interior masonry partition walls, as noted above, are unreinforced.

3. Recommendations

Shear strengthening concrete girders to compensate for the lack of reinforcing stirrups is required unless non-destructive investigations such as x-rays show that sufficient reinforcing exists. No other remedial work for gravity loads is expected.

Seismic strengthening/rehabilitation is necessary and may

include the following:

- A. A fiber reinforced plastic (FRP) overlay at all floors and roof is recommended to improve seismic performance for diaphragms. A reinforced concrete topping slab may be considered, but the additional weight is undesirable for structural purposes. It is possible that the concrete slabs are reinforced. If this is the case, a diaphragm retrofit will likely be unnecessary. X-ray or non-destructive testing will be required to determine the presence of reinforcing steel in the concrete diaphragms.
- B. Vertical wall coring is recommended to reinforce exterior walls. This technique is cost-effective and minimizes the impact of the seismic work to existing historic components such as face brick and plaster.
- C. A combination of vertical wall coring and new shear walls will mitigate the problem associated with the plan shape of the building. (See structural engineer's drawings in the Appendix.)
- D. Several solutions, or a combination of options, exist to mitigate the inadequate connections between walls and diaphragms. These may include adding steel plates or steel sections to joints with welded and/or adhesive connections and may also include the installation of FRP composites at strategic locations.
- E. It is expected that all masonry partitions will be demolished as part of the overall rehabilitation plan.

B. *Plumbing, Sewer and Roof Drainage*

1. Historical Data/Description

There is no historical documentation available for plumbing and sewer systems, and very little information in the original drawings regarding roof drainage systems. Field investigations indicate that it is likely that much of the original steel water supply pipes and cast iron sewer pipes are still in use.

2. Existing Conditions

Steel pipes for culinary water supply are no longer used in new construction, and cast iron sewer pipe in similar applications as this building can be expected to last perhaps 50 years. In short, both systems are in need of replacement. Other plumbing, sewer and roof drain deficiencies include the following:

- A. Restroom floors do not slope adequately to drain.
- B. Overflow drains do not exist at the classroom wing roof, as already noted.
- C. Flooding has been reported at the bottom landing of

the interior stairs, likely due to inadequate or failed sumps.

D. There is a cross-connection between the fourth level drinking fountain drain and roof drains. This has resulted in significant backflow problems; it is reported that at times the roof water being forced through the drinking fountain drain resembles a geyser.

E. Lavatories, urinals, water closets and drinking fountains are all old enough not to have been designed to conserve water or energy and have all exceeded their useful life.

3. Recommendations

All water supply systems, sewer systems, plumbing fixtures and roof drain systems should be replaced. Building rehabilitation should also include new secondary roof drains or overflow scuppers, as indicated above.

C. *Heating, Ventilation and Air Conditioning (HVAC)*

1. Historical Data/Description

As with plumbing and sewer systems, little documentation is available to show what was designed and/or installed originally. The Scott & Welch drawings do show that a connection was to have been constructed to provide new boilers and hot water for heating from an old boiler house about two blocks to the west, adjacent to the old grade school. The connection would have crossed historic Seventh East and Eighth East streets through means of underground concrete tunnels. The drawings also show a fan room under the stage area and vertical chases for heating and ventilation. Some furred ceilings and ducts are shown for ventilation, and as noted above, gravity vents and at least one vertical chase are located on the roof. No equipment such as fans, air handlers, etc. is shown.

2. Existing Conditions

The existing mechanical design is an assortment of varying systems, some of which are very old themselves. None, however, appears to be originally designed for the building. In addition, some equipment does not function. Specific deficiencies include:

A. The steam boiler appears to be undersized and has exceeded its useful life.

B. Fan room equipment is not easily accessed for maintenance, particularly in the fan room and on the gymnasium roof where the rooftop unit cannot be reached when the roof is wet or snow-covered due to the danger of falls.

C. Moisture and mildew are evident, indicating improper ventilation in wet areas such as restrooms.

D. Supply air is delivered through old steam tunnels with pipes that appear to be insulated with asbestos containing materials (ACM'S).

E. Wiring in tunnels is not plenum-rated.

F. Return air is directly through corridors.

G. Multiple and dissimilar systems make maintenance and operation difficult.

H. There is no automatic outside air control.

I. At 80 years old, the steam piping has exceeded its useful life.

J. The rooftop unit at the classroom wing is essentially worn-out.

K. Rooftop ducts are uninsulated.

L. The main flue stack for the boiler is within three feet of the cold air inlet louvers, a code violation and potential life safety hazard.

M. There is no energy efficient control system.

3. Recommendations

The mechanical systems have essentially outlived their expected useful life and complete replacement with modern energy efficient equipment and control systems is recommended. Specific system design and selection of equipment, will be dependent upon the proposed occupancy and re-use.

D. *Electrical Service, Distribution and Lighting*

1. Historical Data/Description

Original design drawings show no information for the electrical service, none for wiring and electrical devices (outlets) and only minimal information for lighting and switching. Field observations have revealed that the existing electrical service is a 120/240 volt "high leg delta service." Inasmuch as this is an outdated means of providing a hybrid single-phase/ three-phase system, it is likely that this was the only service available in 1927 and may have been only minimally upgraded when the City acquired the building.

2. Existing Conditions

Rocky Mountain Power no longer provides or upgrades electrical services such as the existing service at the building. Interior electrical panels and breaker enclosures vary in size and capacity. Most are poorly marked and improperly installed, with numerous code violations evident such as minimal clearances and exposed components.

Lighting systems do not meet existing standards for comfort and energy efficiency. Emergency egress lighting is deficient. The existing electrical system will not allow the addition of an elevator.

3. Recommendations

A new three-phase electrical service rated at 120/208 volts is recommended. The actual size of the new service will be design-specific, i.e. dependent on usage, existing and future loads, and additional loads such as a new elevator. New equipment such as mechanical units and kitchen equipment should be selected to be compatible with the new electrical service. In addition to the electrical service itself, a new grounding system will be necessary. As with mechanical systems, it is expected that all electrical systems, including the service, distribution and wiring systems will be replaced. New systems and equipment will meet modern codes and standards for health and life safety and energy conservation.

Electronic Data, Security and Communications

Systems for computers, security and communications are very specialized, as are the needs of most users. Requirements are user-specific, and for this digital era are also subject to frequent change. Therefore, no specific recommendations are included for these systems. For cost estimate purposes, a mid-level security system has been included as an item in the cost estimate section.

VII. Health and Life Safety

1. Historical Data/Description

Model building codes were developed in the US in the early 1900's, not long before construction of the Sandy Junior High School. Modern codes are much more prescriptive as well as more proscriptive than their early counterparts. Consequently, a comparison between the code under which the school was constructed and today's codes would not be very useful. The following analysis is based on the model code in effect in Utah as of the date of this report, the 2006 International Building Code (IBC), with state and local amendments. As an existing historic building, a companion to the IBC, the 2006 International Existing Building Code (IEBC) is also very useful, and is adopted statewide by reference. The IEBC has also been amended by the State. The City of Sandy makes use of and enforces both model codes.

A. Use and Occupancy Classification

IBC Analysis

The use and occupancy classification based on the original use would be Educational Group E. As altered in 1976 for office use, the occupancy classification for the most part would be Business Group B, with the gymnasium and any other assembly areas with occupant loads greater than 50 classified as Assembly Group A-3. Since it is not expected to return the building to its original use as a school, the following analysis is based on the current classifications, Groups B and A-3.

B. Type of Construction

Per Chapter 6 of the IBC, types of construction are based in part on the fire-resistance rating of the structural frame, bearing walls, non-bearing walls and partitions, and floor and roof construction (IBC Table 601). While the existing construction is technically non-flammable, no documentation exists to justify a fire-resistance rating for the existing building or building elements. Therefore the type of construction best fits Type II-B (non flammable, non-rated). This building does not have an automatic fire sprinkler.

C. Building Height and Area

The existing height is two stories and the gross building area is about 23,925 square feet. According to Table 503, the maximum allowable heights and areas for A-3 and B occupancies in Type II-B construction are two stories and 9,500 square feet for A-3 occupancies and four stories and

14,500 square feet for B occupancies. A 50 percent area increase is allowed due to the street and open areas around the building (Section 506.2.), yielding total allowable areas of 14,250 and 36,750 square feet, respectively. The existing occupancies in this building fall within these limits.

Table 508.3.3 shows the requirements for separating occupancies with fire-resistant construction of varying ratings. The required occupancy separation between A and B occupancies is two hours.

D. Fire Protection Systems

The building size and occupancy are below the IBC limits that would normally require a fire suppression system (fire sprinklers) but a Sandy City amendment to the IBC (Utah Administrative Rule R156-56(4) for Sandy City) adds the following to the IBC: "903.2.14 An automatic sprinkler system shall be installed in accordance with NFPA 13 throughout buildings containing all occupancies where fire flow exceeds 2,000 gallons per minute, based on Table B105.1 of the 2006 International Fire Code. Exempt locations as indicated in Section 903.3.1.1.1 are allowed." Calculations show that the fire flow exceeds the 2,000 gallon-per-minute limit; therefore, an automatic fire sprinkler system will be required in any rehabilitation or re-use scheme. If the gym is going to remain as an A-3 occupancy and has the capability of an occupant load greater than 300 a manual fire alarm system will also be required (International Fire Code, Section 907.2.1).

E. Means of Egress

The existing corridor and stair configuration meet the IBC criteria in Chapter 10 for emergency egress. Under Section 1020.1, Exception 9 the existing open stairs are allowed to remain for A-3 and B occupancies, but according to the Sandy City building official, these will not be allowed for residential occupancies. Enclosures with the requisite fire rating would be required.

F. Accessibility

Since the original enactment of the ADA in 1990, efforts have been made by government and model code agencies to standardize accessibility criteria. As civil rights legislation, the Americans With Disabilities Act (ADA) has no design and enforcement provisions as do building codes. Instead, the following accessibility criteria are based on the IBC and ICC (International Code Council)/American National Standards Institute (ANSI) standard A117.1, which are now virtually identical to the requirements described in the ADA.

A ramp has been added at the south side of the building to allow access to the first level, however it does not meet current ADA requirements. Otherwise, there are no existing provisions for building accessibility by persons with disabilities. Level 3 alterations (the level of work proposed) as defined in IEBC Section 405 and IEBC Chapter 8 require that normal accessibility requirements as described in IBC Chapter 11 be addressed. In addition, requirements of Section 3409, Accessibility for Existing Buildings, must be met. These include the following:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

These requirements apply unless alterations to meet them are technically infeasible. However, with the addition of an elevator, there appear to be no obstacles to making the building fully accessible as would be required for new construction. Existing restrooms are generous in size and can



An existing ramp provides access to the first level.

easily be altered to be accessible. It is also possible to add restrooms to upper levels, where now only those on Level 1 exist. In short, it is recommended that all efforts be made to meet accessibility criteria to the maximum extent possible. The existing non-compliant ramp on the south side of the building will no longer be needed for access, but can remain as a service ramp.

G. Hazardous Materials

Nova Consulting Group, Inc. conducted independent analyses for the presence of lead paint and asbestos within the building. Nova also conducted soil sampling to evaluate the presence of heavy metals in the soils beneath the building. In addition, Master Pest Control, Inc. surveyed the building for the presence of termites and no termite activity was found. Full reports from Nova are included in the Appendix. A summary of their findings is as follows:

1. Asbestos

A total of 54 bulk samples were collected and analyzed for the presence of asbestos-containing material (ACM). The Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) define any building material as an ACM if it contains greater than one percent asbestos. Prior to renovation or demolition of a building, all friable ACM must be removed from the area. In addition, non-friable materials that are in a damaged condition or likely to become friable during the renovation or demolition process must also be removed. Non-friable materials in good condition may remain in certain circumstances.

Out of the 54 samples, asbestos was detected in three materials.

1. Pipe and pipe fittings located in the tunnel system below the building totaling approximately 1,500 linear feet. Condition is good but the material is considered friable.
2. Gray floor tile and black mastic located throughout the basement level underneath the carpet totaling approximately 13,000 square feet. The condition of the material is good and it is non-friable.
3. Black sink undercoating located on two sinks in the basement break room. The materials is in good condition and non-friable.

Materials not sampled due to contamination risk or accessibility were the 4" outside diameter piping and the roofing material. Both should be considered as presumed asbestos-containing material (PACM).

2. Lead Paint

Interior and exterior painted and varnished surfaces were tested using x-ray fluorescence (XRF) technology. Tests were taken at random locations from each testing surface. Chip samples were not collected as part of this study. As defined by the Housing and Urban Development (HUD), any coating with a lead concentration of 1.0 milligram of lead per square centimeter or greater is considered to be a lead-based paint. The sale of lead-based paint to consumers was banned in 1978 by the Consumer Product Safety Commission (CPSC) and its application was banned in areas where consumers have direct access to painted surfaces.

Paint over the 1.0 mg/cm² level was detected on several surfaces in the building. These included painted wood door frames and painted plaster walls throughout the building. The condition of all the surfaces was reported to be good with the exception of the white plaster walls in Room 206 on the upper floor.

3. Soil Sampling

Three soil samples were collected from the building site. Two were taken from the tunnels beneath the building and the third was collected from the northwest corner of the building. Laboratory analysis identified concentration of arsenic and lead that exceeded the EPA Region 9 Preliminary Remediation Goals (PRGs) at the three sampling locations. Arsenic concentrations ranged from 84 mg/kg to 210 mg/kg, exceeding the PRG of 0.39 mg/kg. Lead concentrations ranged from 2,200 mg/kg to 8,700 mg/kg, exceeding the PRG of 400 mg/kg.

If the building is to be demolished and the site reused, or if soil is to be disposed of, a Site Characterization as outlined by the State of Utah Division of Solid and Hazardous Waste is recommended prior to any disturbance or removal of soil at the site. If the building remains in place, no additional soil sampling and analysis is needed. If the parking lot is resurfaced, the soil should be overfilled and capped before repaving.

VIII. Evaluation for Continued use and/or Change of Occupancy

With inadequate and outdated plumbing, mechanical and electrical systems, and given that finishes such as carpet, paint, etc. are also worn, it is not recommended that the building remain in use without the proposed repairs and alterations. Indeed, the very purpose of this investigation is to determine to what extent such rehabilitation is needed, as well as the cost of any proposed work. No life- or health-threatening conditions have been observed, but the overall state suggests that future occupancy be conditional on extensive rehabilitation.

The IBC, and more specifically Chapter 9 of the IEBC, specifically regulate changes of occupancy and make allowances for existing buildings as long as unsafe conditions are corrected. Additionally, much of the work described above, such as a seismic upgrade and the addition of a fire sprinkler system, are intended to significantly improve health and life safety. The extent of the work required and the required performance level of building systems are, in part, dependent upon the type of occupancy. Following is a brief analysis of the requirements for a change of occupancy based on the IEBC.

It has already been noted that the original educational use is a group E occupancy, as defined by the IBC. Current uses are A-3 (assembly) and B (business), as noted. Utah Administrative Rule R156-820, State Amendments to the IEBC requires that buildings undergoing a change of occupancy meet the seismic requirements for the new occupancy, based on the relative occupancy hazard. IBC Table 1604.5 groups the existing uses, proposed business uses and residential uses within the same occupancy category, Category II. For purposes of this rule, according to IEBC Table 912.4, the occupancy hazard is unchanged. Consequently, no seismic improvements beyond those already indicated are necessary.

Similar arguments apply to the proposed change of occupancy as they relate to building elements and materials (Section 903), fire protection (Section 904), emergency egress (Section 905) and accessibility (Section 906). Since the proposed improvements and alterations all exceed any minimum requirements of IEBC Chapter 9, the proposed work complies with the intent of both building codes. Similar analyses should be performed for any other proposed changes in occupancy.

IX. Estimate of Costs to Upgrade and Renovate the Building

As part of the study, the consultant team has fully examined the condition of the building in order to assess the required upgrades necessary for restoring the building to be fully functional and code compliant. In this section of the report, the costs and value of restoring the building are discussed and compared to the costs for constructing a new building to meet the needs of the city. The results of this study, the preliminary cost estimate options, and the recommendations of the consultant team are designed to assist city officials in their decision of considering the costs and benefits of restoration of the building in relation to the costs of demolition and new construction.

Historical Value of the Building

Located in Historic Sandy, the building is one of the few remaining non-residential structures that represent the history of the city. As a former school for residents, the building is well-known to the population of this historic area of Sandy City. Restoration of the building provides the opportunity for it to serve as a historic landmark for Sandy City and as an anchor for the surrounding neighborhood. The value of this opportunity should be evaluated seriously by the city in the decision-making process. The building, like others designed by architects Scott and Welch during this time period, is an excellent example of the clean lines and simple detailing representative of the NeoClassical Moderne style of architecture.

In its current condition the architectural and functional integrity of the building have been compromised and the potential and beauty of the building is not being realized. Tall windows that provide natural daylight have been blocked out due to lowered ceilings, obscured glazing, or, as on the west side, have been replaced with units that are shorter than the original windows. Original exterior and interior doors have been replaced with aluminum storefront and hollow core doors, respectively. Ceilings have been lowered in the majority of the building's areas to accommodate more modern mechanical systems. Cumulatively, these alterations have led to a dysfunction between the building as it was designed and how it is being utilized currently. As such, the historic and architectural value of the building's style and form (large windows, natural daylight, tall ceilings, and open stairways) has not been able to be appreciated by the city and the various occupants of the building.

Mechanically the building currently has a patchwork of different systems, none designed for the original building. The

long-term fate and use of the building has been in question since its acquisition by Sandy City. Due to this uncertainty, an ad hoc short-term approach has been taken in regard to the maintenance and mechanics of the building. As a result the building, originally designed to work with minimal indoor engineering of nature, has not been allowed to work effectively or efficiently from a long-term building-wide approach. Restoration of the building would include all new mechanical and electrical systems. Essentially, the city would be getting a new building in a classic, distinctive exterior.

Economic Value of the Building

The building is in very good condition for its age, and apart from seismic deficiencies, is overall structurally sound and stable. The quality of the materials and construction are very high, which is common for many pre-World War II buildings.

The full potential of the building has not realized during its use by Sandy City. The building was converted to a new use without the benefit of being designed to best function for that new use. A full restoration would allow the building to be designed and programmed to function well for the intended occupants. The layout of the building is such that it is well-suited for adaptation to any of the proposed uses of the building (community center, office, residential).

The exterior appearance of the building can be greatly improved by simple measures, including the cleaning and repair of the exterior brick and terra cotta and the removal of insensitive signage and mechanical elements. In addition, the overall appearance of the building and site would benefit from landscaping and site improvements.

Sandy City is a growing community and is likely to continue to grow in the future. Working with an existing building that may currently have extra space is a logical and forward-thinking approach for a community that expects to grow. From a fiscal standpoint, allocating funds to restore this building will be a better investment than using funds to demolish the existing building and construct a smaller structure that would house only the Boys & Girls Club. Although the building is not highly ornate, costs associated with the materials and details found in this type of building are often cost prohibitive for new construction.

Sustainable Value of the Building

In addition to the costs associated with the demolition of the building, there are other costs from a sustainable standpoint that make the restoration of the building appealing. The building itself is embodied with all of the energy that was

expended to create the materials for its construction. These costs would be lost with demolition. When comparing historical integrity with energy efficiency, embodied energy is often not fully considered, even though it has a significant impact on the energy contributed to a building. Restoration of the building is an opportunity for Sandy City to make a statement regarding its interest in sustainable building practices by reusing buildings rather than throwing them away to build anew. Additionally, the design of pre-World War II buildings allows for incorporation of less energy-intensive systems as they were constructed to work with these types of systems originally. The building and its site also offer enough space to consider implementing a geothermal system to power the mechanical operations. Although the upfront cost can be 25 to 50% more than a conventional mechanical system, this cost is often recouped in just a few years (3 to 8) in energy expenditure savings from being off-the-grid.

Proposed Uses for the Building

The building, if restored, is most likely to continue to house the Sandy Boys & Girls Club with additional space for community center uses. However, two other use options for the building, office or residential, have also been considered. Conceptual floor plans for each of these three uses have been prepared. On the following pages, the cost estimate numbers for restoring and renovating the building for each proposed use have been divided into the following categories:

1. Core & Shell Upgrades – Abatement, ADA, Seismic, Mechanical, & Electrical
2. Architectural Renovation (three proposed uses)
3. Contractor Fees/Contingency
4. Site & Landscaping - Remediation and Upgrades (cost estimates provided by Sandy City)

The conceptual floor plans are located directly behind the cost estimates for the three proposed uses.

It should be noted that historic tax credits are available if the building is restored by a private entity or a public/private partnership for either the office or residential use. As a public entity, the tax credits would not be available to Sandy City if the building is used for city purposes.

Cost Estimate Ranges

As discussed in the recommendation sections of the report, a range of options exist for the restoration approach for many of the building's elements. In some cases it is the approach (repair and reuse of windows versus replacement windows) while in others it is whether the materials and finishes are low, mid, or high range in quality. It should be noted that approaches that prioritize historical integrity over current energy efficiency methods often are more cost-effective.

The following breakout of cost estimates shows the different available options and their estimated costs. Where options have been provided, Option 1 is the lower cost and Option 2 is the higher cost. The cost for finishes and fixtures has been estimated using mid-range options. A total low/high range is provided based on these categorical cost ranges, using all Option 1 approaches for the low range and all Option 2 for the high range. A restoration of the building can use a combination of these options. As such, if the decision is made to restore and reuse the building, this section is designed to serve as a menu of different options. An approach can be selected that will work with the needs, wishes and budget of the city.

Costs for the building have been estimated using both on-site evaluations by subcontractors and RS Means CostWorks estimating software. Cost estimates for the site work and landscaping have been provided by Sandy City and are included to provide a complete building and site cost estimate total.

Cost Estimates for Community Center/Boys & Girls Club Use

Core & Shell Upgrades - Abatement, Seismic, Mechanical, & Electrical

1 Abatement	\$40,000
2 Seismic	
Option 1: Shear walls, center core drilling	\$527,825
Option 2: Shear walls, center core drilling, diaphragms	\$702,175
Mechanical	
Option 1: Conventional system; fire system	\$704,500
Option 2: Geothermal system; fire system	\$915,700
Electrical	\$275,000
ADA	\$119,900

Architectural Renovation

Exterior Cleaning & Repair	
Option 1: Repair & Clean	\$30,000
Option 2: Repair & Clean; Restoration Wash	\$58,000
Interior Demolition, New Interior Partition Walls/Woodwork	
Option 1: Demolition, replace existing walls with new stud walls & drywall; acoustical ceilings	\$295,000
Option 2: Demolition, replace existing walls with new stud walls & drywall; fur out exterior walls; drywall ceilings	\$345,000
Doors/Windows	
Option 1: Repair Existing Windows; Additional glazing on interior; Reuse gym doors, new doors elsewhere	\$196,840
Option 2: Replace all windows & doors	\$308,040
Finishes/Fixtures	
Option 1: Refinish gym floor; paint interior walls	\$244,080
Option 2: New gym floor (if diaphragm reinforcement) and finishes for new furred-out walls	\$300,960
Roof/Insulation	
Option 1: Classroom wing roof only (if no diaphragm reinforcement)	\$50,500
Option 2: Entire roof replacement	\$95,500
Miscellaneous	\$11,419

Contractor Fee/Contingency

Contractor	\$189,805
General Conditions/Safety Coordinator	\$182,742
Contingency	\$200,000

	Option 1	Option 2
Building Total Cost:	\$3,067,611	\$3,744,241
Building Square Foot Cost:	\$123	\$150

Site & Landscaping

Parking Lot, Sidewalks; Drainage	
Option 1: 4" Base	\$139,279
Option 2: Additional 12" excavation and base	\$203,279
Irrigation	\$65,000
Landscaping	\$60,000

	Option 1	Option 2
Total Cost:	\$3,331,890	\$4,072,520
Square Foot Cost:	\$133	\$163

Cost Estimates for Office Use

Core & Shell Upgrades - Abatement, Seismic, Mechanical, & Electrical

1 Abatement		\$40,000
2 Seismic		
	<i>Option 1: Shear walls, center core drilling</i>	\$527,825
	<i>Option 2: Shear walls, center core drilling, diaphragms</i>	\$702,175
Mechanical		
	<i>Option 1: Conventional system; fire system</i>	\$704,500
	<i>Option 2: Geothermal system; fire system</i>	\$915,700
Electrical		\$275,000
ADA		\$119,900

Architectural Renovation

Exterior Cleaning & Repair		
	<i>Option 1: Repair & Clean</i>	\$30,000
	<i>Option 2: Repair & Clean; Restoration Wash</i>	\$58,000
Interior Demolition, New Interior Partition Walls/Woodwork		
	<i>Option 1: Demolition, replace existing walls with new stud walls & drywall; acoustical ceilings</i>	\$272,500
	<i>Option 2: Demolition, replace existing walls with new stud walls & drywall; fur out exterior walls; drywall ceilings</i>	\$322,500
Doors/Windows		
	<i>Option 1: Repair Existing Windows; Additional glazing on interior; Reuse gym doors, new doors elsewhere</i>	\$183,400
	<i>Option 2: Replace all windows & doors</i>	\$294,600
Finishes/Fixtures		
	<i>Option 1: Refinish gym floor; paint interior walls</i>	\$239,080
	<i>Option 2: New gym floor (if diaphragm reinforcement) and finishes for new furred-out walls</i>	\$295,960
Roof/Insulation		
	<i>Option 1: Classroom wing roof only (if no diaphragm reinforcement)</i>	\$50,500
	<i>Option 2: Entire roof replacement</i>	\$95,500
Miscellaneous		\$11,419

Contractor Fee/Contingency

Contractor	\$189,805
General Conditions/Safety Coordinator	\$182,742
Contingency	\$200,000

	<u>Option 1</u>	<u>Option 2</u>
Building Total Cost:	\$3,026,671	\$3,703,301
Building Square Foot Cost:	\$121	\$148

Site & Landscaping

Parking Lot, Sidewalks; Drainage		
	<i>Option 1: 4" Base</i>	\$139,279
	<i>Option 2: Additional 12" excavation and base</i>	\$203,279
Irrigation	\$65,000	
Landscaping	\$60,000	

	<u>Option 1</u>	<u>Option 2</u>
Total Cost:	\$3,290,950	\$4,031,580
Square Foot Cost:	\$132	\$161

Cost Estimates for Residential Use

Core & Shell Upgrades - Abatement, Seismic, Mechanical, & Electrical

1 Abatement		\$40,000
2 Seismic		
	<i>Option 1: Shear walls, center core drilling</i>	\$527,825
	<i>Option 2: Shear walls, center core drilling, diaphragms</i>	\$702,175
Mechanical		
	<i>Option 1: Conventional system; fire system</i>	\$704,500
	<i>Option 2: Geothermal system; fire system</i>	\$915,700
Electrical		\$275,000
ADA		\$119,900

Architectural Renovation

Exterior Cleaning & Repair		
	<i>Option 1: Repair & Clean</i>	\$30,000
	<i>Option 2: Repair & Clean; Restoration Wash</i>	\$58,000
Interior Demolition, New Interior Partition Walls/Woodwork		
	<i>Option 1: Demolition, replace existing walls with new stud walls & drywall; acoustical ceilings</i>	\$330,000
	<i>Option 2: Demolition, replace existing walls with new stud walls & drywall; fur out exterior walls; drywall ceilings</i>	\$380,000
Doors/Windows		
	<i>Option 1: Repair Existing Windows; Additional glazing on interior; Reuse gym doors, new doors elsewhere</i>	\$211,120
	<i>Option 2: Replace all windows & doors</i>	\$322,320
Finishes/Fixtures		
	<i>Option 1: Refinish gym floor; paint interior walls</i>	\$173,080
	<i>Option 2: New gym floor (if diaphragm reinforcement) and finishes for new furred-out walls</i>	\$229,960
Unit Kitchens/Bathrooms		\$584,800
Roof/Insulation		
	<i>Option 1: Classroom wing roof only (if no diaphragm reinforcement)</i>	\$50,500
	<i>Option 2: Entire roof replacement</i>	\$95,500
Miscellaneous		\$11,419

Contractor Fee/Contingency

Contractor	\$189,805
General Conditions/Safety Coordinator	\$182,742
Contingency	\$200,000

	<u>Option 1</u>	<u>Option 2</u>
Building Total Cost:	\$3,630,691	\$4,307,321
Building Square Foot Cost:	\$145	\$172

Site & Landscaping

Parking Lot, Sidewalks; Drainage		
	<i>Option 1: 4" Base</i>	\$139,279
	<i>Option 2: Additional 12" excavation and base</i>	\$203,279
Irrigation		\$65,000
Landscaping		\$60,000

	<u>Option 1</u>	<u>Option 2</u>
Total Cost:	\$3,894,970	\$4,635,600
Square Foot Cost:	\$156	\$185

Appendices

Appendix A: Dunn Associates Structural Report

Appendix B: Dunn Associates Drawings - S210, S202, S203

Appendix C: Nova Asbestos Report

Appendix D: Nova Lead Paint Report

Appendix E: Nova Soil Sampling Report

Appendix F: Master Pest Termite Report

Appendix G: Original Floor Plans

Appendix H: As-Is Evacuation Plans

*Prepared for:
Sandy City Corporation
10000 South Centennial Parkway
Sandy, UT 84070*

